



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
2003/00277

July 14, 2003

Mr. Lawrence C. Evans
U.S. Army Corps of Engineers
Portland District, CENWP-CO-GP
P.O. Box 2946
Portland, OR 97208-2946

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation on the Love's Travel Stop, Douglas County, Oregon (Corps No. 200100961)

Dear Mr. Evans:

Enclosed is a biological opinion (Opinion) prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) for the Love's Travel Stop, Douglas County, Oregon. The Corps of Engineers (Corps) determined that the action may adversely affect Oregon Coast (OC) coho salmon (*Oncorhynchus kisutch*), and requested formal consultation on this action. NOAA Fisheries concludes in this Opinion that the proposed action is not likely to jeopardize the continued existence of OC coho salmon.

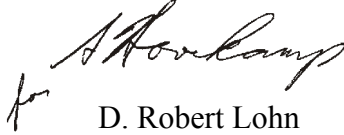
Pursuant to section 7 of the ESA, NOAA Fisheries has included reasonable and prudent measures with non-discretionary terms and conditions that NOAA Fisheries believes are necessary and appropriate to minimize the potential for incidental take associated with this project. The interrelated activity of operating this facility is analyzed in this Opinion for the purpose of determining jeopardy, but, because of the uncertainty of the operation's scope, the operation of the facility is not included in the incidental take statement for this Corps permit.

This document also serves as consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and its implementing regulations (50 CFR Part 600). NOAA Fisheries concludes that the proposed action will adversely affect designated EFH for coho salmon. As required by section 305(b)(4)(A) of the MSA, included are conservation recommendations that NOAA Fisheries believes will avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from the proposed action. As described in the enclosed consultation, 305(b)(4)(B) of the MSA requires that a Federal action agency must provide a detailed response in writing within 30 days after receiving an EFH conservation recommendation.



Questions regarding this letter should be directed to Ken Phippen of my staff in the Oregon Habitat Branch at 541.957.3385.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Robert Lohn". The signature is written in a cursive style with a small "for" written to the left of the main signature.

D. Robert Lohn
Regional Administrator

cc: Dan Cary, ODSL
Jim Brick, ODFW
Steve Wille, USFWS

Endangered Species Act - Section 7 Consultation Biological Opinion

&

Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation

Love's Travel Stop
Roberts Creek, Douglas County, Oregon
(Corps No. 200200961)

Agency: U.S. Army Corps of Engineers

Consultation
Conducted By: NOAA's National Marine Fisheries Service,
Northwest Region

Date Issued: July 14, 2003

Issued by: 
for D. Robert Lohn
Regional Administrator

Refer to: 2003/00277

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1. INTRODUCTION

1.1 Consultation History and Background

On March 10, 2003, the Army Corps of Engineers (Corps) requested formal consultation under section 7 of the Endangered Species Act (ESA) on issuance of a permit under section 404 of the Clean Water Act. The applicant, Love's Travel Stops & Country Stores (Applicant), proposes to construct a travel stop near Winston, Oregon. The planned travel stop is in an area beside the North Fork of Roberts Creek (North Fork) and includes access development by constructing two stream crossings.

NOAA's National Marine Fisheries Service (NOAA Fisheries) received the letter requesting formal consultation March 18, 2003, and attended a site review on March 24, 2003 with personnel from the Corps, Oregon Department of Fish and Wildlife (ODFW), and Land and Water Environmental Services, Inc. (Land and Water), the Applicant's consultants. Site discussions identified mutually agreeable conservation measures that were not originally included in the Corps' permit. These measures were described in supplemental documentation provided to NOAA Fisheries, the Corps and ODFW by Land and Water (April 18, 2003). After receiving this supplemental information, NOAA Fisheries determined sufficient information was available to complete formal consultation.

In Oregon coastal streams north of Cape Blanco, including North Fork, NOAA Fisheries listed Oregon Coast (OC) coho salmon under the ESA as threatened on August 10, 1998 (63 FR 42587). Protective regulations for OC coho were issued by NOAA Fisheries under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). This consultation is undertaken under section 7(a)(2) of the ESA, and its implementing regulations, 50 CFR Part 402.

NOAA Fisheries prepared this biological opinion (Opinion) to address effects of the proposed project on this species. The objective of this Opinion is to determine whether the subject action is likely to jeopardize the continued existence of the above listed species, and to explain why NOAA Fisheries believes the proposed action will adversely affect essential fish habitat (EFH).

1.2 Proposed Action

The Corps proposes to issue a permit to the Applicant for the construction of a travel stop near Winston, Oregon (T28S, R6W, section 11A, SE1/4). Development of the site will involve the installation of buildings, parking lots, utilities, access roads, and a stormwater detention pond, which will affect 2.64 acres of wetland prairie mosaic, and 0.26 acres of riverine wetlands and riparian areas. Proposed on-site facilities will include parking spaces for approximately 87 trucks, a truck scale, truck fueling stations, a convenience store, additional gas pumps for cars, parking for RVs, and 34 parking spaces for cars.

Two access roads will be constructed across the North Fork. Access Road One will require the placement of 1902 cubic yards (CY) of fill in 0.10 acre of Wetland A. Access Road One will

also fill 0.12 acre of Wetland C with 1036 CY of fill. Access Road Two will require the placement of 1853 CY of fill in 0.16 acres of Wetland A. Cumulative impacts to Wetland A is 0.26 acres. Access road crossings of the North Fork will consist of two box culverts, 140 feet long, buried two feet below the streambed on a maximum 1% grade. The stream is expected to be dry at the time of construction.

The Applicant will complete mitigation to compensate for the effects of filling existing wetlands (Corps permit application 200200961). The mitigation will consist of on- and off-site riverine wetland and riparian zone mitigation and off-site wetland prairie mitigation. Off-site wetland prairie compensatory mitigation will be performed on the mainstem of Roberts Creek, on property acquired by the Applicant for the purposes of wetland mitigation. Off-site mitigation will consist of the restoration of 6 acres of drained and ditched pasture into wetland prairie. Effects to the channel of the North Fork, and the associated riparian zone will be mitigated on- and off-site.

The permit application described the on-site riverine wetland mitigation as 0.40 acres of degraded riverine wetlands and riparian areas downstream of the proposed project. On-site mitigation will include stabilizing streambanks, improving habitat, planting suitable native vegetation, removing undesirable plant species, and minimizing effects related to construction. Reduction of streambank slope is proposed in a few locations, with a maximum slope of 3:1, and a minimum slope of 4:1. This is intended to widen the channel, decrease flow velocities, increase water storage capacity and help dissipate hydrologic energy during high flow events (Land and Water 2002a). Channel widening will start at mean high water elevation, create a 6-foot bench, then slope back at a 4:1 ratio. Channel depth to the mean high water elevation is estimated to be two feet.

Additional conservation measures were developed by the Applicant (Land and Water 2003) after the Corps application was submitted.

- A deed restriction was recorded for the on-site mitigation area along the creek west of the passenger car entrance. The deed restriction will protect that portion of the creek as a mitigation site in perpetuity, allowing vegetation management, and prohibiting activities that would have a negative impact on the creek and adjacent wetlands.
- A construction setback will include an area 50 feet from the top of the streambank on both sides of the creek for the west side (Corps permit application) and will also include a setback east of the mitigation area as a “Riparian Vegetation Protection Area” (RVPA). This designation will provide for the removal of non-native and invasive vegetation, while protecting the existing riparian vegetation.
- The RVPA between the two entrances will be actively managed to improve the riparian vegetation. This activity will include the removal and active suppression of non-native and invasive vegetation, especially blackberries, as well as planting of additional trees, shrubs, and other appropriate vegetation.

Off-site enhancement of 1.08 acres of degraded riverine wetlands and riparian areas associated with Roberts Creek are included in the Applicant's proposal for riverine wetland and riparian zone resource replacement (Land and Water 2002a). This mitigation site is approximately 2.6 miles southeast of the proposed travel stop (T28S, R5W s17, Tax Lot 600). Enhancement will include fencing a portion of Roberts Creek to eliminate livestock access, and planting the riparian zone at a high density to aid in stabilizing the eroding Roberts Creek streambanks.

An off-site wetland prairie compensatory mitigation plan (Land and Water 2002b) will be implemented to mitigate loss of this ecosystem type. The mitigation site is on agricultural land adjacent to Roberts Creek. The mitigation site is used as pasture for livestock, is regularly mowed for hay, and has been altered by agricultural practices for over 100 years. Properties beside the mitigation site are agricultural land.

The primary goal of the Off-Site Wetland Prairie Compensatory Mitigation Plan is the restoration of 6.0 acres of ditched and drained pasture into highly functioning wetland prairie. Restoration of wetland hydrology will include plugging artificial surface water drainage pathways that currently channel water off the pasture, lowering the grade 0.5 to 2 feet, establishing variable micro-topography, and constructing a berm to aid in containing surface water on the mitigation site.

2. ENDANGERED SPECIES ACT

2.1 Biological Opinion

2.1.1 Biological Information

Although limited data are available to assess population numbers or trends, NOAA Fisheries believes that all coho salmon stocks comprising the OC coho salmon evolutionarily significant unit (ESU) are depressed relative to past abundance. The OC coho salmon ESU is identified as all naturally-spawned populations of coho salmon in coastal streams south of the Columbia River and north of Cape Blanco (60 FR 38011, July 25, 1995). Biological information for OC coho salmon can be found in species status assessments by NOAA Fisheries (Weitkamp *et al.* 1995) and by the ODFW (Nickelson *et al.* 1992).

Abundance of wild coho salmon spawners in Oregon coastal streams declined from roughly 1965 to 1975, and has fluctuated at a low level since then (Nickelson *et al.* 1992). Spawning escapements for this ESU may be less than 5% of that in the early 1900s. Contemporary production of coho salmon may be less than 10% of the historic production (Nickelson *et al.* 1992). Average spawner abundance has been relatively constant since the late 1970s, but preharvest abundance has declined. Average recruits-per-spawner may also be declining. The OC coho salmon ESU, although not at immediate danger of extinction, may become endangered in the future if present trends continue (Weitkamp *et al.* 1995). Preliminary findings of the

Biological Review Team (BRT 2003) indicate that the recent increase in spawner escapement levels are likely due to good ocean productivity while freshwater productivity continues to decline. Continued degradation of freshwater habitat that results in decreased productivity may lead to localized extinction during the next low ocean productivity cycle (BRT 2003).

The project is near river mile (RM) 1.0 of the North Fork (T28S, R6W, section 11A, SE1/4). The North Fork is a tributary of Roberts Creek, a tributary of the South Umpqua River. The action area includes the construction area and the off-site mitigation area beside Roberts Creek.

OC coho salmon enter the Umpqua River from September through February and migrate up the system to the tributaries. Spawning typically occurs from late November through early February, depending on the location within the basin. For this area, coho salmon are typically observed spawning near the end of November through early January.

Juvenile coho salmon live in freshwater for one year before smoltification. These juveniles typically seek thermal refugia and cover in smaller tributary streams, but due to declining water discharge in August and September, they are forced into the larger rivers, such as Roberts Creek or downstream to the South Umpqua River. Some studies have observed downstream dispersal movement soon after emergence (Bradford and Taylor 1997). Kruzic (1998) and Roper (1995) observed juvenile coho salmon leaving the tributaries and entering the mainstem of the South Umpqua River in their studies of the Upper South Umpqua basin. Studies have shown a variety of environmental factors that may influence movement. These factors include temperature, fish length, lunar cycle, stream discharge, increases in turbidity, food availability, and habitat quality (Kruzic 1998, Bilby and Bisson 1987, Sigler *et al.* 1984, and Hartman *et al.* 1982).

The North Fork is believed to be an intermittent stream with seasonal use by OC coho salmon. A few deep pools exist within the project area. These pools will provide suitable late spring and early summer rearing habitat for juvenile coho salmon. This type of seasonal use is common for the drier drainages of Douglas County within the Umpqua basin.

Freshwater habitat incorporates important components of the environment, such as water, abiotic and biotic physical factors, substrates, stream channel structures, and adjacent riparian areas. Areas beside a stream that provide shade, sediment, nutrient or chemical regulation, streambank stability, and input of LWD or organic matter are important components to OC coho salmon habitat. The project is along the banks and substrate of the North Fork and on adjacent uplands/wetlands of Roberts Creek. The North Fork may provide spawning habitat and late spring or early summer rearing habitat for OC coho salmon juveniles. Roberts Creek is identified as spawning and rearing habitat for OC coho salmon by the ODFW.

2.1.2 Evaluating Proposed Action

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR 402 (the consultation regulations). NOAA Fisheries must determine whether the action is likely to jeopardize the listed species. This analysis involves the initial steps of defining the

biological requirements of the listed species, and evaluating the relevance of the environmental baseline to the species' current status. Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action; (2) the environmental baseline; (3) effects of interrelated and interdependent actions; and (4) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmon's life stages that occur beyond the action area. If NOAA Fisheries finds that the action is likely to jeopardize the continued existence of the listed species, NOAA Fisheries must identify reasonable and prudent alternatives for the action. For the proposed action, NOAA Fisheries' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NOAA Fisheries considers the extent to which the proposed action impairs the function of essential biological and ecological elements necessary for juvenile and adult migration, spawning, and rearing of the listed and proposed species under the existing environmental baseline.

2.1.3 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA to listed salmon is to define the biological requirements of the species most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species, taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list OC coho salmon for ESA protection and also considers new data available that are relevant to the determination (Weitkamp *et al.* 1995, BRT 2003).

The relevant biological requirements are those necessary for OC coho salmon to survive and recover to naturally-reproducing population levels, at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful spawning, rearing, and migration. The current status of the OC coho salmon, based upon their risk of extinction, has not significantly improved since the species was listed and, in some cases their status may have worsened. Freshwater productivity is believed to be continuing to decline, therefore this ESU may face serious risk of local extinction during the next poor ocean cycle (BRT 2003).

2.1.4 Environmental Baseline

Regulations implementing section 7 of the ESA (CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, state, or private actions and other human activities in the action area. The environmental baseline also includes the anticipated impacts of all

proposed Federal projects in the action area that have undergone section 7 consultation, and the impacts of state and private actions that are contemporaneous with the consultation in progress.

The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). Direct effects occur at the project site, and may extend upstream or downstream based on the potential for disturbance, impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian and instream habitat modifications. Indirect effects may occur throughout the watershed where actions lead to additional activities or affect ecological functions contributing to stream degradation. For this consultation, the action area includes the affected streambed, streambank, adjacent riparian zone, and aquatic areas of the North Fork 1/4 mile downstream from the project site. Additional actions beside Roberts Creek, at the off-site mitigation site are also included within the action area. The action area then includes the North Fork from the upstream end of the project site downstream to the confluence with Roberts Creek, and Roberts Creek from the off-site mitigation location downstream to the confluence with the North Fork.

As in much of the Pacific Northwest, timber harvest, road construction, urbanization, and agricultural development have all had their influence on today's aquatic habitat conditions. This reach of Roberts Creek is currently listed on the state of Oregon's water quality limited streams for flow modification (ODEQ 2001). The current baseline conditions of Roberts Creek and the North Fork may be characterized as degraded conditions. Urbanized development along the North Fork has over-simplified the channel through straightening and entrenchment. Culverts have decreased accessibility for OC coho salmon for all life-stages. Roberts Creek can be characterized in a similar way. Urbanization and agricultural practices have significantly altered the ecological functions of Roberts Creek.

2.1.5 Analysis of Effects

2.1.5.1 Direct Effects of Proposed Action

Direct harm may occur to OC coho salmon juveniles due to this project's in-water activities. Identified mechanisms and sources of impacts that may cause direct effects to OC coho salmon include: (1) Displacement and harassment from suitable habitat; (2) increased predation; (3) high turbidity; (4) handling of juveniles while draining pools; and (6) water pollution caused by hazardous materials, such as petroleum products. The proposed activities in the North Fork may cause these direct effects.

The most significant direct effect to OC coho salmon juveniles will be the potential need to capture and handle the fish. Construction activities to build the two road access locations will occur near pools that may contain coho salmon. If it is necessary to capture fish, these individuals will be subject to several risks. Capturing juvenile coho salmon and handling them will lead to increased stress and potential mortality. Relocation of individuals from the North Fork to Roberts Creek, may disorient individual fish and increase the possibility of predation.

Although the Applicant expects the stream reach to be dry during construction, several pools may still be present and inhabited by juvenile OC coho salmon. Collection methods such as electrofishing or seining are known to cause damage to fish. The handling may also cause physical damage, which can lead to immediate mortality or delayed mortality by secondary means, such as disease or parasite infections. All of these direct effects may lead to increased mortality. If fish removal activities are in accordance with NOAA Fisheries' fish handling guidelines (NMFS 1998), mortality will be reduced. Any listed fish removed from the isolated work area will experience high stress, with the possibility of up to a 5% delayed mortality rate, depending on rescue method. Handling stress is also likely to increase due to the high turbidity generated from the North Fork's fine sediment substrate. Higher water temperature exacerbates mortality due to the higher stress levels. A combination of high temperatures, high turbidity, and elevated stress levels will work as a negative synergistic effect (McCullough 1999). Delayed mortality of the handled juvenile coho salmon is expected to range from 5 to 10% due to the synergistic effects of these different stressors.

Increased vulnerability to predation is another result of displacing juvenile coho from the North Fork to Roberts Creek. Roberts Creek is expected to be inhabited by smallmouth bass (*Micropterus dolomieu*), northern pikeminnow (*Ptychocheilus oregonensis*), and other predators of OC coho salmon. Avian predators are also in the area. Moving the juvenile coho salmon will likely result in flight response and disorientation that will significantly increase mortality. Feeding behavior of predators can be triggered by this flight response of prey (Martel and Dill 1995).

Hazardous material spills require immediate control to limit the environmental damage. Spill of petroleum-based materials can rapidly migrate downstream from a site. This problem must be addressed through proactive practices, such as use of absorbent booms and other control measures. Hazardous materials may be released by fuel spills and equipment failure. Operation of back hoes and excavators require the use of fuel, hydraulic fluid and lubricants, which, if spilled into the bed or channel of a waterbody or the riparian zone during project construction, could injure or kill aquatic organisms. Petroleum-based contaminants, such as fuel, oil, and some hydraulic fluids, contain polycyclic aromatic hydrocarbons (PAHs) that can cause acute toxicity to salmonids at high levels of exposure and can also cause chronic lethal as well as acute and chronic sublethal effects to aquatic organisms (Neff 1985, Hatch and Burton 1999).

2.1.5.2 Indirect Effects of Proposed Action

Indirect effects of the proposed action are expected to be related to: (1) Reductions in macroinvertebrates (forage for juvenile OC coho salmon) due to turbidity, habitat loss, and toxic substances; (2) effects to riparian vegetation; (3) increase in impervious surfaces resulting in changes in hydrologic processes; (4) wetland and riparian functioning adjustments; (5) stream channel adjustments; and (6) the interrelated and interdependent action of operating the Travel Stop. These effects may be minimized by the proposed project design features that: (1) Reduce risk of accidents; (2) provide timely and efficient clean-up in case of an accident; (3) provide recovery of riparian vegetation and associated ecological values; (4) minimize the effects of

increasing impervious surfaces; and (5) provide protection for riparian vegetation and ecological values.

A reduction of OC coho salmon juvenile forage is possible due to the construction of the Travel Stop. Macroinvertebrate populations may be reduced by the effects of toxic substances, such as contamination from petroleum product spills (Hatch and Burton 1999, Ireland *et al.* 1996). Toxicity of PAHs to macroinvertebrates increases with the organisms exposure to ultraviolet light, which would be exacerbated during low flows (Ireland *et al.* 1996, Hatch and Burton 1995, Monson *et al.* 1995). High levels of turbidity may also kill the macroinvertebrates, but this is less likely due to the nature of the existing habitat and the likelihood that sediment-tolerant species dominate the population. The combination of less forage and high temperatures can result in increased mortality for juvenile coho salmon (McCullough 1999).

Some riparian vegetation will be removed along the banks of the North Fork. The North Fork is shaded by hardwood tree species and some trees will be removed by the construction of the access roads. Some loss of allochthonous nutrients may occur. A small, temporary reduction in available vegetative matter, as well as terrestrial insects, may result in a slightly lower nutrient load to the aquatic ecosystem. Proposed on-site mitigation will include the planting of riparian vegetation within the area downstream of the new access roads, between the access roads, and upstream of the access roads. When these areas reach their vegetative potential, the loss of nutrients and other riparian values will be compensated in the North Fork. Off-site mitigation along Roberts Creek will also compensate for these lost values in the Roberts Creek drainage.

An increase in impervious surface due to parking lots and buildings will increase the rate of water run-off during precipitation events. Increased run-off rates can increase channel erosion by increasing the stream's ability to mobilize sediment particles. Bank and channel erosion rates may increase due to the construction of the Travel Stop. Proposed measures to mitigate this new impervious surface include a 0.60 acre stormwater detention pond and riparian vegetation protection (BA 2002). The detention pond and protected riparian zone are expected to minimize the potential effects from the new impervious surface added to the North Fork's drainage.

The off-site mitigation site will convert ditched and drained pasture into a wetland prairie. Enhancement of an additional 1.08 acres of degraded riverine wetland and riparian area is proposed to exclude livestock from Roberts Creek and plant the channel, riverine wetlands, and riparian area. Willow will be planted at a high density, along with Oregon ash and Oregon white oak. Conversion of pasture land to wetland prairie will improve infiltration within the Roberts Creek drainage and improve functioning of Roberts Creek during storm events.

Stream channel adjustments are expected from the flood channel development proposed for the downstream mitigation area. The proposed action includes widening the channel above the "mean high water line" to provide a floodplain. Although the intent of this action is to relieve the erosive forces on the stream channel, some adjustments may occur before the newly planted vegetation is established and the channel grade and morphology stabilizes. In addition to sediment from the newly modified channel, some channel response may occur near the

constructed stream crossings. No quantitative estimates exist to describe the current sediment load and contribution by the streambanks, but the post-implementation sediment load is expected to slightly increase the first year. This additional sediment has the potential to affect juvenile OC coho salmon due to increased turbidity levels and increased fine sediment in the bedload.

2.1.5.3 Interrelated and Interdependent Actions

Long-term management of the Travel Stop poses a risk to the aquatic environment due to the potential for hazardous materials associated with vehicle operation and the maintenance and operation of the business. The Travel Stop will have a spill prevention and control and countermeasure plan developed (Loren Waldron, Land and Water, personal communication with K. Phippen, March 24, 2003). Although this plan will not prevent contamination, if implemented as described (Corps permit enclosure), it should minimize the long-term effects of a spill. Another potential source of contamination will be from individual motor vehicle operators. Disposal of used oil, discarded oil containers, and anti-freeze containers are examples of sources of contaminants. An unknown quantity of PAH compounds may be introduced to the North Fork through these actions. Long-term presence of PAHs in the North Fork due to the operation of the Travel Stop may reduce macroinvertebrate populations. In addition to the previously described effects from potential contamination from accidents, the long-term management may also lead to chronic levels of PAHs. These contaminants may lead to genotoxicity, carcinogenicity, and changes in feeding rates in fish (Billiard *et al.* 2000, Fent *et al.* 1998, Gregg *et al.* 1997, and Rotchell *et al.* 1995). Coho salmon may exhibit the same responses to PAHs observed in other species, therefore the presence of these contaminants could lead to reduced survival from the embryo to smolt phases and possibly to spawning adults.

2.1.5.4 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as “those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation.” Other activities within the watershed have the potential to impact fish and habitat within the action area. Future Federal actions, including the ongoing operation of land management activities that are being (or have been) reviewed through separate section 7 consultation processes.

Non-Federal activities within the action area are expected to slightly increase. Although there is a projected 34% increase in human population over the next 25 years in Oregon (ODAS 1999), the area upstream of this site is not expected to follow this rapid population growth. Surrounding uplands are primarily agricultural land, rural homes, small wood lot owners, and some industrial land and industrial timber land. NOAA Fisheries assumes that future private and state actions will continue within the action area, at slightly increased levels due to population growth.

2.1.6 Conclusion

After reviewing the current status of OC coho salmon, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, NOAA Fisheries has determined that constructing the Travel Stop, as proposed, is not likely to jeopardize the continued existence of OC coho salmon. This finding is based, in part, on incorporation of the project design criteria into the proposed project design, (*i.e.*, ODFW in-water work window, site revegetation, development and implementation of a spill prevention and countermeasure or pollution control plan, but also on the following considerations: (1) Wetland and riparian enhancement on-site and off-site will maintain or improve hydrologic functions of the North Fork and Roberts Creek; (2) all capture and release of OC coho salmon will follow NOAA Fisheries' guidelines; (3) the stormwater detention pond, riparian protection and enhancement, and wetland enhancement will reduce adverse effects due to stormwater hydrology and water quality; (4) the interdependent and interrelated effects caused by the long-term management of the Travel Stop will be avoided or minimized through use of a hazardous material management plan and are not expected to significantly disrupt the subpopulation of the South Umpqua River; and (5) the proposed action will not appreciably reduce the functioning of the ESU's already impaired habitats, or retard the long-term progress of impaired habitats toward properly functioning condition (PFC).

2.1.7 Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of proposed actions on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. NOAA Fisheries has no conservation recommendations to offer at this time.

2.1.8 Reinitiation of Consultation

This concludes formal consultation on this action in accordance with 50 CFR 402.14(b)(1). Reinitiation of consultation is required if: (1) The amount or extent of incidental take is exceeded; (2) the action is modified in a way that causes an effect on the listed species that was not previously considered in the BA and this Opinion; (3) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

2.2. Incidental Take Statement

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. "Harm" is further defined to include

significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. “Harass” is defined as actions that create the likelihood of injuring listed species by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. “Incidental take” is take of listed animal species that results from, but is not the purpose of, the federal agency or the Applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

2.2.1 Amount or Extent of Take

NOAA Fisheries anticipates that the proposed action covered by this Opinion is reasonably certain to cause incidental take of juvenile OC coho salmon resulting from: (1) Disturbance and displacement of individuals due to the capture and handling of juvenile OC coho salmon; (2) increased vulnerability to predation from relocation; (3) short- and long-term exposure to hazardous materials (primarily PAHs) contaminants; (4) short-term increases of turbidity and fine sediment bedload from the stream channel modifications; and (5) loss of habitat due to the two constructed stream crossings. The effects of these activities on population levels are largely unquantifiable and not expected to be measurable in the long term. Therefore, even though NOAA Fisheries expects some low level of non-lethal incidental take to occur due to the habitat-related effects of the action covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific number of individual fish taken. In instances such as this, NOAA Fisheries designates the expected level of take in terms of the extent of take allowed. Here, NOAA Fisheries limits the area of allowable incidental take during construction to the distance from the action site in the North Fork downstream to the confluence with Roberts Creek. No incidental take is expected from the actions at the off-site mitigation site next to Roberts Creek. Incidental take occurring beyond these areas is not authorized by this consultation. During capture and release of fish as part of the work area isolation process, it is unlikely that more than 100 juvenile OC coho salmon will be handled. Therefore, incidental take due to this part of the action shall not exceed 10 juvenile OC coho salmon based on an estimated 10% mortality rate.

The act of operating this business and any subsequent hazardous materials accidents that may occur is subject to take prohibitions of section 9 and rules promulgated under section 4(d) of the ESA.

2.2.2 Reasonable and Prudent Measures

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

1. Minimize the likelihood of incidental take associated with impacts to riparian and instream habitats by avoiding or replacing lost riparian and instream functions.
2. Minimize the likelihood of incidental take from construction activities in or near watercourses by implementing pollution and erosion control measures.
3. Minimize the likelihood of incidental take associated with instream work by restricting work to recommended in-water work periods.
4. Minimize the likelihood of incidental take associated with the capture and handling of individual OC coho salmon juveniles by following accepted guidelines.
5. Minimize the likelihood of incidental take during the long-term operation of the Travel Stop by implementing a spill prevention control and countermeasure plan.
6. Monitor the effectiveness of the proposed conservation measures in minimizing incidental take and report to NOAA Fisheries.

2.2.3 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure #1 (instream and riparian habitat function), the Corps shall ensure that:
 - a. Flag boundaries of the clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.
 - b. Complete site restoration and clean up, by implementing the on- and off-site riverine wetland and riparian zone compensatory mitigation plan submitted with the application.
2. To implement reasonable and prudent measure #2 (construction), the Corps shall ensure that a pollution and erosion control plan (PECP) is developed to prevent point-source pollution related to construction operations, and will contain all of the pertinent elements listed below, and meet the requirements of all applicable laws and regulations.
 - a. Describe methods that will be used to prevent erosion and sedimentation associated with access roads, construction sites, equipment and material storage sites, fueling operations and staging areas. Fuel, maintain and store heavy equipment as follows:
 - i. Place vehicle staging, maintenance, refueling, and fuel storage areas at least 150 feet horizontal distance from any stream.

- ii. Inspect all vehicles operated within 150 feet of any stream or water body daily for fluid leaks before leaving the vehicle staging area. Repair any leaks detected before the vehicle resumes operation.
 - iii. When not in use, store vehicles in the vehicle staging area.
 - b. Describe hazardous products or materials that will be used, including procedures for inventory, storage, handling, and monitoring.
 - c. Develop a spill containment and control plan with these components:
 - i. Notification procedures;
 - ii. specific clean up and disposal instructions for different products;
 - iii. quick response containment and clean up measures;
 - iv. proposed methods for disposal of spilled materials; and
 - v. employee training for spill containment.
 - d. If flowing water is present during construction, install an absorbent boom downstream of the project site before project implementation and maintain the boom throughout the in-water work phase.
 - e. Stockpile a supply of erosion control materials (*e.g.*, silt fence and straw bales) on-site to respond to sediment emergencies. Use sterile straw or hay bales when available to prevent introduction of weeds.
 - f. Install all temporary erosion controls (*e.g.*, straw bales, silt fences) downslope of project activities within the riparian area. Keep them in place and maintained throughout the contract period, and until permanent erosion control measures are effective.
 - g. Where fertilizer can wash into the river, fertilizer should not be used within 50 feet of the river.
3. To implement reasonable and prudent measure #3 (instream work), the Corps shall ensure that all in-water work will be completed within the ODFW-approved in-water work period (July 1 - September 15). Extensions of the in-water work period should not be anticipated except under extenuating circumstances and must be approved in advance and in writing by NOAA Fisheries.
4. To implement reasonable and prudent measure #4 (isolation of in-water work area and proper fish handling methods), the Corps shall ensure that:
- a. In-water work. During in-water work (work below the OHW mark), if the project involves either significant channel disturbance or use of equipment within the wetted channel, the work area should be well isolated from the active flowing stream within a cofferdam (made out of sand bags, sheet pilings, inflatable bags, *etc.*) or similar structure, to minimize the potential for sediment entrainment. Furthermore, no ground or substrate disturbing action will occur below the OHW mark 300 feet upstream of potential spawning habitat as measured at the thalweg without isolation of the work area from flowing waters. After the cofferdam is in place, any fish trapped in the isolation pool will be removed using NOAA Fisheries' guidelines.

- b. Water Intake Structures. Any water intake structure authorized under this Opinion must have a fish screen installed, operated and maintained in accordance to NOAA Fisheries' fish screen criteria.
 - i. Water pumped from the work isolation area will be discharged into an upland area providing over-ground flow before returning to the creek. Discharge will occur so that it does not cause erosion.
 - ii. Discharges into potential fish spawning areas or areas with submerged vegetation are prohibited.
- c. Fish Salvage. Before, and intermittently during, pumping attempts to salvage and release fish from the work isolation area will be made as is prudent to minimize risk of injury. If the fish salvaging aspect of this project requires the use of seine equipment to capture fish, it must be accomplished as follows:
 - i. Seining will be conducted by or under the supervision of a fishery biologist experienced in such efforts and all staff working with the seining operation must have the necessary knowledge, skills, and abilities to ensure the safe handling of all ESA-listed fish.
 - ii. ESA-listed fish must be handled with extreme care and kept in water to the maximum extent possible during seining and transfer procedures. The transfer of ESA-listed fish must be conducted using a sanctuary net that holds water during transfer, whenever necessary to prevent the added stress of an out-of-water transfer.
 - iii. Seined fish must be released as near as possible to capture sites (preferably the North Fork if still flowing or optionally in Roberts Creek).
 - iv. The transfer of any ESA-listed fish from the Applicant to third-parties other than NOAA Fisheries personnel requires written approval from NOAA Fisheries.
 - v. The Applicant must obtain any other Federal, state, and local permits and authorizations necessary for the conduct of the seining activities.
 - vi. The Applicant must allow NOAA Fisheries, or its designated representative, to accompany field personnel during the seining activity, and allow such representative to inspect the Applicant's seining records and facilities.
 - vii. A description of any seine and release effort will be included in a post-project report, including the name and address of the supervisory fish biologist, methods used to isolate the work area and minimize disturbances to ESA-listed species, stream conditions before and following placement and removal of barriers, the means of fish removal, the number of fish removed by species, the condition of all fish released, and any incidence of observed injury or mortality.
- d. If the fish salvaging aspect of this project requires the use of electrofishing equipment to capture fish, it must be accomplished as follows (NMFS 1998):
 - i. Electrofishing may not occur in the vicinity of listed adults in spawning condition or in the vicinity of redds containing eggs.

- ii. Equipment must be in good working condition. Operators must go through the manufacturer's preseason checks, adhere to all provisions, and record major maintenance work in a log.
- iii. A crew leader having at least 100 hours of electrofishing experience in the field using similar equipment must train the crew. The crew leader's experience must be documented and available for confirmation; such documentation may be in the form of a logbook. The training must occur before an inexperienced crew begins any electrofishing, and it must also be conducted in waters that do not contain listed fish.
- iv. Measure conductivity and set voltage as follows:

<u>Conductivity (umhos/cm)</u>	<u>Voltage</u>
Less than 100	900 to 1100
100 to 300	500 to 800
Greater than 300	150 to 400

- v. Direct current (DC) must be used at all times.
- vi. Each session must begin with pulse width and rate set to the minimum needed to capture fish. These settings should be gradually increased only to the point where fish are immobilized and captured. Start with a pulse width of 500us and do not exceed 5 milliseconds. Pulse rate should start at 30Hz and work carefully upwards. In general, pulse rate should not exceed 40 Hz, to avoid unnecessary injury to the fish.
- vii. The zone of potential fish injury is 0.5m from the anode. Care should be taken in shallow waters, undercut banks, or where fish can be concentrated because in such areas the fish are more likely to come into close contact with the anode.
- viii. The monitoring area must be worked systematically, moving the anode continuously in a herringbone pattern through the water. Do not electrofish one area for an extended period.
- ix. Crew must carefully observe the condition of the sampled fish. Dark bands on the body and longer recovery times are signs of injury or handling stress. When such signs are noted, the settings for the electrofishing unit may need adjusting. Sampling must be terminated if injuries occur or abnormally long recovery times persist.
- x. Whenever possible, a block net must be placed below the area being sampled to capture stunned fish that may drift downstream.
- xi. The electrofishing settings must be recorded in a logbook along with conductivity, temperature, and other variables affecting efficiency. These notes, together with observations on fish condition, will improve technique and form the basis for training new operators.
- e. Fish Passage. Full passage shall be provided for both adult and juvenile forms of salmonid species throughout the construction period.

5. To implement reasonable and prudent measure #5 (spill prevention and countermeasure plan), the Corps shall ensure that:
 - a. Development and implementation of a spill prevention and countermeasure plan which includes:
 - i. Initial emergency spill procedures.
 - ii. Summary of spill procedures.
 - iii. Continuing facility inspection and security.
 - iv. Spill report agencies.
 - v. Required spill report information.
 - vi. Facility information.
 - vii. Containment and clean-up of spills.
 - viii. Certification by engineer.
 - ix. Certification by management.
 - x. Spill clean-up resources.
 - xi. Plan of facility.
 - b. Placement of anti-littering signs along the riparian corridor to help identify the concerns for placing discarded oil containers and other trash containing PAHs.
 - c. Weekly trash clean-out patrols of the North Fork of Roberts Creek to prevent long-term sources of PAHs in the stream.
6. To implement reasonable and prudent measure #6 (monitoring), the Corps shall ensure that:
 - a. Comprehensive monitoring occurs, and preparation of a post-project report to ensure that these terms and conditions meet their objective of minimizing the likelihood of adverse effects to OC coho salmon. Monitoring requirements include:
 - i. Submit a report to NOAA Fisheries within 120 days of completing the project. Describe the Corps' success meeting conservation recommendations above. Include the following information.
 - (1) Project identification.
 - (a) Project name.
 - (b) Starting and ending dates of work completed for this project.
 - (c) The Corps contact person.
 - (2) Pollution and erosion control. A summary of all pollution and erosion control inspection reports, including descriptions of any failures experienced with erosion control measures, efforts made to correct them and a description of any accidental spills of hazardous materials.
 - (3) Site restoration. Documentation of the following conditions:
 - (a) Finished grade slopes and elevations.

- (b) Log and rock structure elevations, orientation, and anchoring, if any.
 - (c) Planting composition and density.
 - (d) A plan to inspect and, if necessary, replace failed plantings and structures as required in 1(e).
 - (e) A narrative assessment of the effects of the project and compensatory mitigation on natural stream function.
 - (f) Photographic documentation of environmental conditions at the project site before, during and after project completion.
 - (g) Photographs will include general project location views and close-ups showing details of the project area and project, including pre and post construction.
 - (h) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.
 - (i) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.
- b. Submit monitoring reports to:
NOAA Fisheries
Oregon Habitat Branch
Attn: 2003/00277
525 NE Oregon Street, Suite 500
Portland, OR 97232-2778
- c. If dead, injured, or sick endangered or threatened species specimen is found, initial notification must be made to NOAA Fisheries' Law Enforcement Office, at the Roseburg Field Office, 2900 NW Stewart Parkway, Roseburg, Oregon 97470; phone 541.957.3388. Care should be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered and threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not disturbed.

3. MAGNUSON-STEVENSON ACT

3.1 Magnuson-Stevens Fishery Conservation and Management Act

The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NOAA Fisheries on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of essential fish habitat: “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle (50CFR600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NOAA Fisheries shall provide conservation recommendations for any Federal or state activity that may adversely affect EFH;
- Federal agencies shall within 30 days after receiving conservation recommendations from NOAA Fisheries provide a detailed response in writing to NOAA Fisheries regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NOAA Fisheries, the Federal agency shall explain its reasons for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NOAA Fisheries is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

3.2 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Pacific salmon: Chinook, coho, and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based on this information.

3.3 Proposed Action

The proposed action is detailed above in section 1.2 of this document. The action area includes a reach of Roberts Creek near the off-site mitigation work, and North Fork Roberts Creek near RM 1, downstream to its confluence with Roberts Creek. This area has been designated as EFH for various life stages of chinook salmon and coho salmon.

3.4 Effects of Proposed Action

As described in detail in section 2.1.5 of this document, the proposed activity may result in detrimental short- and long-term adverse effects to a variety of habitat parameters. These impacts include:

1. Turbidity. Excavation in the wetted channel and placement of fill may result in short-term releases of sediment. An increase in turbidity can impact fish and filter-feeding macro-invertebrates downstream of the work site.
2. Chemical Contamination. As with all construction activities, accidental release of fuel, oil, and other contaminants may occur.
3. Riparian Vegetation. Removal of existing riparian vegetation will reduce some allochthonous contribution of nutrients and terrestrial insects.

3.5 Conclusion

NOAA Fisheries believes that the proposed action will adversely affect the EFH for Pacific salmon.

3.6 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The conservation measures proposed for the project by the Applicant and all of the reasonable and prudent Measures and terms and conditions contained in sections 2.2.2 and 2.2.3 are applicable to salmon EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH conservation recommendations.

3.7 Statutory Response Requirement

Please note that the Magnuson-Stevens Act (section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NOAA Fisheries after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse impacts of the activity on EFH. If the response is inconsistent with a conservation recommendation from NOAA Fisheries, the agency must explain its reasons for not following the recommendation.

3.8 Supplemental Consultation

The Corps must reinitiate EFH consultation with NOAA Fisheries if the action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920).

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